
STUDIES IN MIDDLE AMERICAN BROMELIACEAE I

Smith & Downs (1974) in their monograph of Bromeliaceae subfamily Pitcairnioideae included 56 species of *Pitcairnia* from Mexico and Central America. Since that time four previously unreported species were collected from the area, including one originally thought to be native to Brazil (Zamudio, 1988), and five new species have been described (Luther, 1987a, b; Rauh, 1986; Smith & Read, 1975). In addition, we herein propose two new taxa, *P. beachiae* and *P. virginalis*, bringing the number of *Pitcairnia* species for Mexico and Central America to 67. It is likely that this number will continue to fluctuate as our knowledge of the flora expands, due not only to new species, but also to reinterpretations of species limits (cf. McVaugh, 1989).

Pitcairnia beachiae Utley & Burt-Utley, sp. nov. TYPE: Costa Rica. Puntarenas: Valle de General, 300 m, collected 12 May 1974, flowered in cultivation April 1984, *Beach* 74-25 (holotype, US; isotypes, CR, F, MO). Figure 1.

Folia petiolata persistentia spinescentia. Scapus decurvus abrupte bracteae persistentes internodia superantes. Inflorescentia 4.5–10 cm longa densiflora. Petala lutea. Ovarium circa $\frac{3}{4}$ inferum.

Epilithic or terrestrial herbs, to about 1.5 m tall in flower. Leaves dimorphic, persistent; outer leaves sheathing, bladeless; inner leaves 1–1.7 m long, subpetiolate to petiolate; sheaths 1–1.5 cm long, 4–4.5 cm wide, serrulate, light brown to stramineous with brown shaggy pubescence, contracting abruptly into the petiole; petiole 20–60 cm long, 0.4–1.2 cm wide, scattered spinose-serrate, becoming strongly involute on drying; blade with a pronounced midrib, plicate, narrowly elliptic to lance-elliptic, 69–100 cm long, 3–6 cm wide, apically attenuate, glabrous adaxially, densely pale pubescent abaxially, marginally scattered spinulose-serrulate becoming subdensely serrulate apically, chartaceous. Scape 22–32 cm long, 5–7 mm diam. (1–1.5 cm diam. in living material), erect for 5–7 cm and then abruptly decurved, brown floccose pubescent; bracts 3.5–36 cm long, exceeding the internodes but divergent to sub-

spreading and the scape exposed, pale pubescent to locally glabrous, lower bracts subfoliaceous and scattered spinose-serrate, middle and upper bracts much reduced and entire. Inflorescence simple, 4.5–10 cm long, 5–6 cm diam., horizontal or slightly ascending, densely spicate to subglobose, polystichously many-flowered. Floral bracts exceeding the sepals, erect, ovate to elliptic, 2.3–3.5 cm long, (0.7–)1.2–1.5 cm wide, acuminate, entire, pink drying brown, finely evanescently pubescent. Flowers erect to divergent, sessile; sepals coriaceous, triangular, 2.6–2.9 cm long, 1–1.2(–1.5) cm wide, short attenuate, brown floccose abaxially, glabrous adaxially, much thickened basally, thickened to distinctly asymmetrically keeled medially; corolla narrowly tubular, curved (abaxially?) in distal $\frac{1}{3}$ at anthesis; petals basally appendaged, dissimilar, straight to falcate, narrowly obovate, ovate or elliptic, 6–6.4 cm long, 0.7–1.4 cm wide, yellow, basally attenuate, apically acute and mucronulate; stamens included, filaments 3–4.6 cm long, flattened, anthers basifixed, narrowly hastate, 1.3–1.6 cm long; ovary about $\frac{3}{4}$ inferior, 0.9–1.3 cm long, 0.75–1 cm diam.; style 4.5–5.5 cm long.

This species is named in honor of Eloise Beach of Orlando, Florida. In addition to collecting this species for the first time, Eloise's unstinting studies of the Bromeliaceae have added considerably to our horticultural and botanical knowledge of the family. *P. beachiae* is most similar to *P. quesnelioides* L. B. Smith from Colombia and the Peruvian *P. fimbriato-bracteata* Rauh in its densely flowered, simple inflorescences, persistent petiolate armed leaves, and sessile to subsessile flowers with appendaged petals and largely inferior ovaries. It is easily distinguished from these taxa by its persistent floral bracts, in contrast to the deciduous or early decomposing floral bracts of the latter two species. It further differs from *P. quesnelioides* in having persistent upper scape bracts and a shorter inflorescence (4.5–10 cm vs 15 cm). In addition, *P. beachiae* differs from *P. fimbriato-bracteata* in its scape bracts, which much exceed the internodes and yellow flowers; in contrast the latter species has red flowers and scape bracts that are conspicuously shorter than the internodes. Despite our numerous attempts we have been unable to

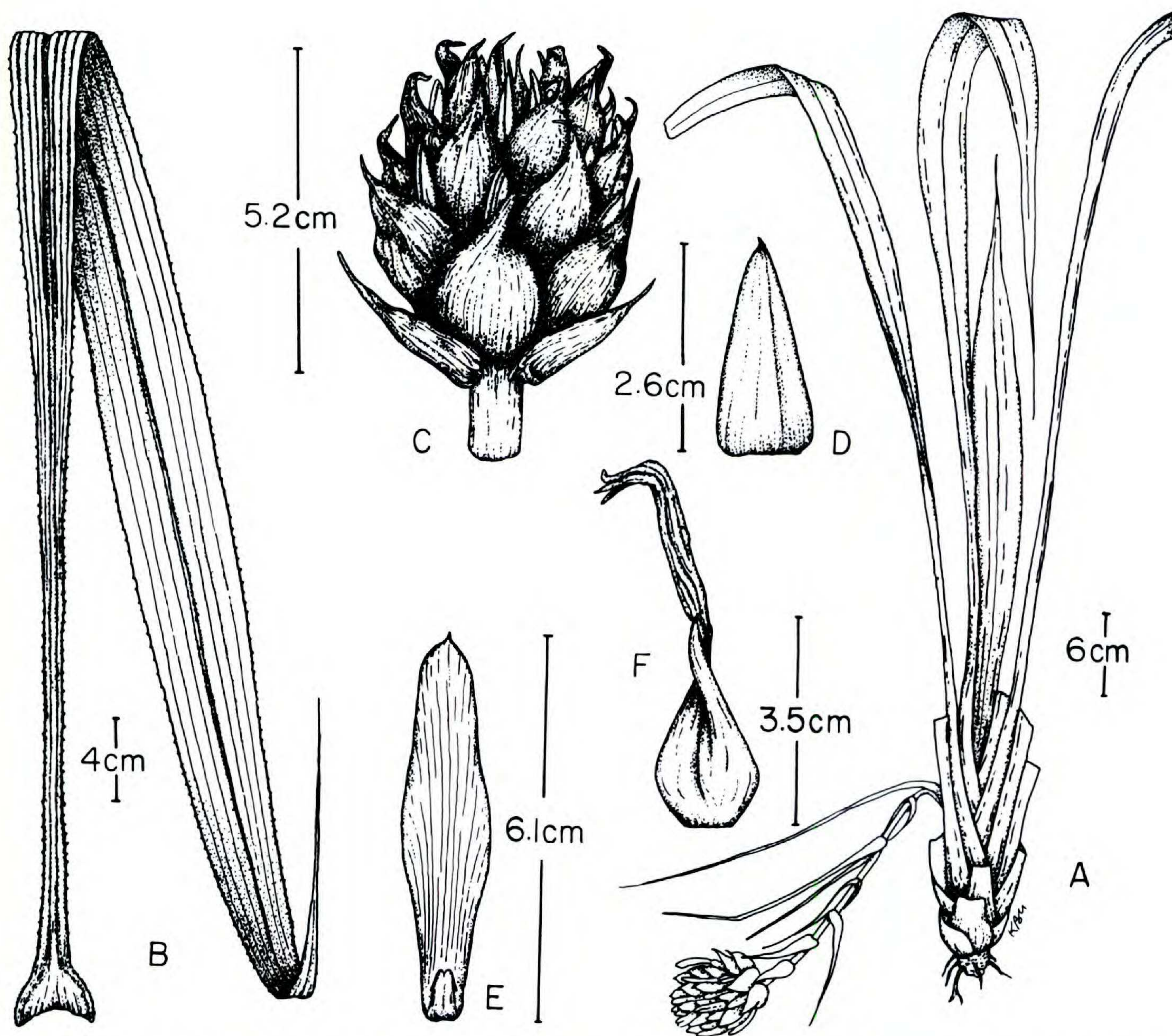


FIGURE 1. *Pitcairnia beachiae* Utley & Burt-Utley. —A. Habit. —B. Leaf. —C. Inflorescences. —D. Sepal. —E. Petal. —F. Flower post-anthesis. From *Beach* 74–25.

collect fertile material at the type location, even though vegetative individuals are regularly encountered.

***Pitcairnia virginalis* Utley & Burt-Utley, sp. nov.** TYPE: Mexico. Oaxaca: steep roadbanks along MEX 175, 29.7–30.1 mi. N of N side of Pochutla or 5.1–5.5 mi. N of turnoff to Pluma Hidalgo, 4,900–5,000 ft., 17 July 1989, *Utley & Utley 8400* (holotype, MEXU; isotypes, MICH, MO, US). Figure 2.

Folia heteromorpha. Laminae maiores deciduae. Scapus 32–65 cm longus bractee infernae foliaceae. Inflorescentia 7–10 cm longa ante florenti circa 30 cm ubi fructificans. Bractee florales 4.5–6.5 cm longae late ovatae vel anguste ellipticae acutae chloroleucae pubescentes pallentes. Petala alba appendiculata. Ovarium circa ½ inferum.

Herbs, terrestrial or epilithic on humus-covered

rocks; 60–100 cm tall in flower. Leaves trimorphic: the outer two types with broadly triangular, tightly overlapping sheaths, these entire proximally becoming serrate near junction with blade, castaneous, densely white to pale ferrugineous lanate abaxially, glabrous to glabrescent adaxially; some with blades persistent, spiniform, pectinate-serrate, 3–5 cm long, others with apparently linear(?), deciduous blades which disarticulate 2–4 cm above the sheath, persistent portion of blade 1–2.5 cm wide, densely serrate (characters of deciduous portion unknown): inner leaves and lower scape bracts entire or weakly serrate basally: sheaths ovate, 4–5.5 cm long, 2.2–3 cm wide, pale, scattered pubescent abaxially; blades narrowed above the sheath, often with a tendency to disarticulate at the sheath upon drying, elongate-triangular or elliptic to narrowly ovate, 30–36 cm long, 2.5–3 cm wide, scattered pale floccose abaxially. Scape curved-erect,

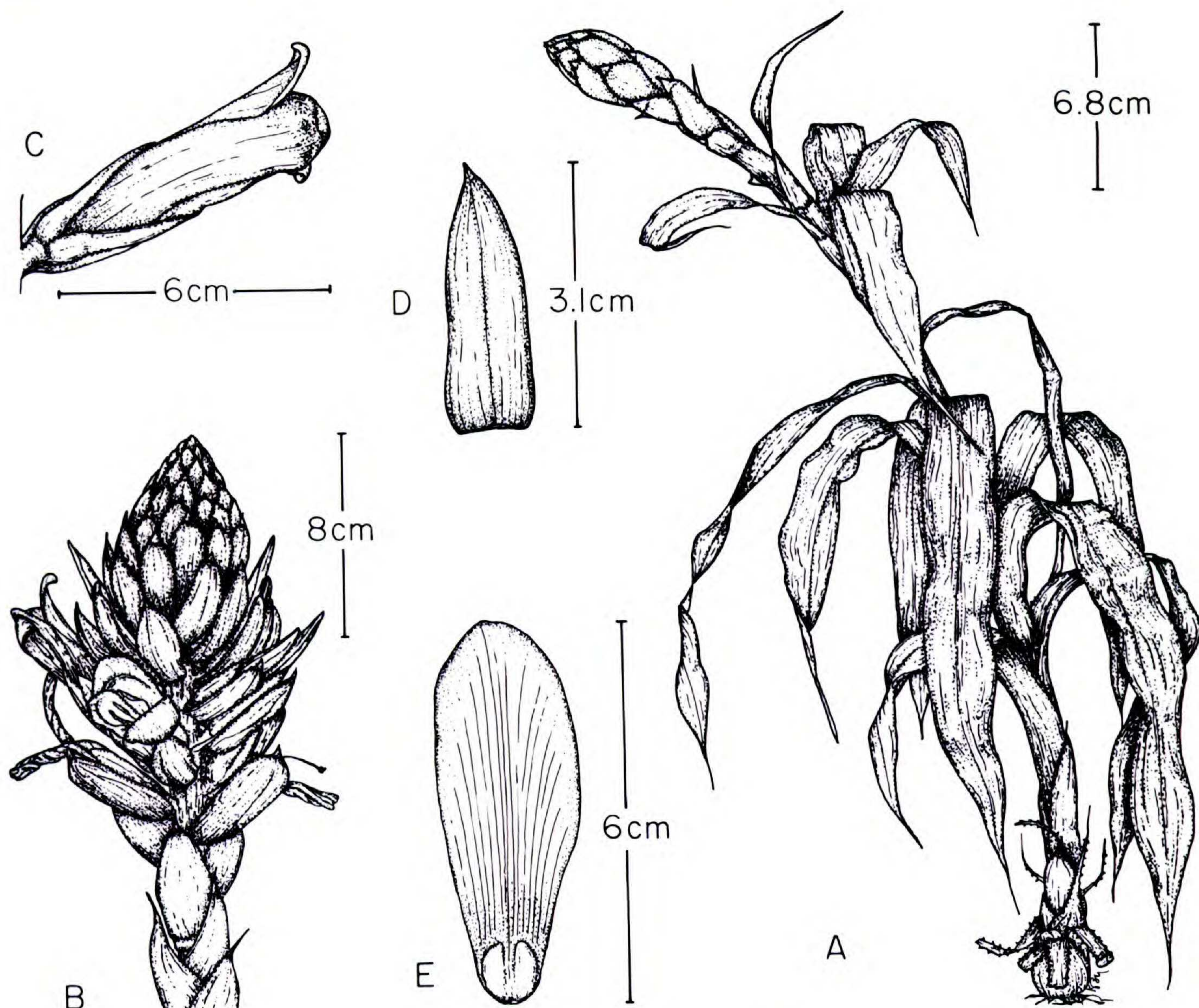


FIGURE 2. *Pitcairnia virginalis* Utley & Burt-Utley.—A. Habit.—B. Inflorescence.—C. Flower at anthesis.—D. Sepal.—E. Petal. From Utley & Utley 8400.

32–65 cm long, scattered to subdensely pale floccose; lower bracts foliaceous, the upper reduced and subfoliaceous, 21–31 cm long, glabrous adaxially, scattered pale floccose abaxially, sheaths inflated, clasping, blades divergent to drooping-recurved above middle. Inflorescence simple, racemose, 7–10 cm long pre-anthesis, elongating to about 30 cm post-anthesis. Floral bracts broadly ovate to narrowly elliptic, 4–6.5 cm long, 1.3–3 cm wide, becoming reduced distally, acute, pale green-white drying brown post-anthesis, adaxially glabrous, abaxially white floccose proximally, densely pale ferrugineous distally. Flowers ascending to divergent or subspreading at anthesis, pedicels 3–5 mm; sepals broadly triangular to subligulate, 2.9–3.3 cm long, about 1 cm wide, acute, subdensely brown pubescent; corolla broadly tubular to elongate-campanulate; petals basally appendaged, obovate, 5.9–6.3 cm long, 2–2.3 cm wide, white, broadly acute; stamens included, fil-

aments 4.1–4.3 cm long, anthers basifixed, hastate, 1.4–1.5 cm long; ovary trigonous in cross section, about 1.2 cm long, 0.6–0.7 cm diam., about one-half or less inferior; style about 5–5.2 cm.

Pitcairnia virginalis is most similar to *P. abundans* L. B. Smith from Nayarit, Mexico in its heteromorphic leaves, with the larger leaf blades deciduous, elongate scape with foliaceous to subfoliaceous lower bracts and white appendaged petals. It differs in having broadly ovate to narrowly elliptic, apically acute floral bracts, 4–6.5 cm long, in contrast to the floral bracts of *P. abundans*, which are triangular to triangular-lanceolate, apically caudate-attenuate and 1.5–3.5 cm long. Moreover, sepals of *P. virginalis* are generally longer (2.9–3.3 vs 2.6–3 cm) and apically acute rather than long subulate like those of *P. abundans*. *Pitcairnia virginalis* is unusual among Mexican and Central American *Pitcairnia* species in

having white, elongate-campanulate corollas, and large, pale green to white, pubescent floral bracts. In addition, the inflorescence elongates considerably post-anthesis; this change in morphology is so striking that plants at anthesis and in fruit could, on casual inspection, be taken for distinct species.

Additional collections. MEXICO. OAXACA: El Porvenir, carr. Pochutla-Oaxaca, 15 junio 1985, R. Torres C. 6835 (MEXU); MEX 175 1.5 mi. S of La Soledad, 5,100 ft., 1 Aug. 1990, Utley & Utley 8588 (CAS).

This work was supported by a grant from the Standley Smith Horticultural Trust to the University of New Orleans and in part by NSF grant DEB-8107868 to the Missouri Botanical Garden. We thank the curators of the following herbaria for the loan of specimens or use of facilities: MEXU, MICH, MO.

LITERATURE CITED

- LUTHER, H. E. 1987a. *Pitcairnia hammelii*, a new *Pitcairnia* from Panama. J. Bromeliad Soc. 37: 128–129.
- . 1987b. Two new *Pitcairnia*s from northwestern Panama. J. Bromeliad Soc. 37: 212–214.
- MCVAUGH, R. 1989. In: W. R. Anderson (editor), *Flora Novo-Galiciana* 15: 4–79.
- RAUH, W. 1986. Bromeliensstudien I. Neue und wenig bekannte Arten aus Peru und anderen Ländern (18. Mitteilung). Trop. Subtrop. Pflanzenwelt 58: 5–63.
- SMITH, L. B. & R. J. DOWNS. 1974. *Pitcairnioideae* (Bromeliaceae). Fl. Neotrop. 14: 1–658.
- & R. READ. 1975. Notes on Bromeliaceae, XXXVII. Phytologia 30: 289–303.
- ZAMUDIO, S. 1988. Descubrimiento de *Pitcairnia undulata* Scheidweiler (Bromeliaceae) en Tabasco, Mexico. Acta Bot. Mexicana 2: 5–9.
- John F. Utley and Kathleen Burt-Utley, *Department of Biological Sciences, University of New Orleans, New Orleans, Louisiana 70148, U.S.A.*